

REMARKS

This Amendment is being filed in response to the final Office Action dated June 16, 2003. Reconsideration and allowance of the application in view of the amendments made above and the remarks to follow are respectfully requested.

Claims 1, 2, 4, 6-15 are pending in this application of which Claims 1, 12, 13, and 14 are independent claims. Claims 1, 8 and 12 have been amended above. Claim 8 has been amended to correct the reversal of two words.

Turning to the rejections presented in the final Office Action, the Examiner maintains the rejections presented in the prior Office Action of January 17, 2003. Thus, Claims 1, 2, 4, 6, 7, and 12-15 were again rejected under 35 U.S.C. §102(a) as anticipated by "Real-Time Gesture Recognition with the Perseus System" by Kahn et al. ("Kahn"). Claims 8-11 were again rejected under 35 U.S.C. §103(a) as being unpatentable over Kahn in view of "Put That Where?" by Billinghamurst ("Billinghamurst").

In addition, in paragraph 6 of the Office Action, the Examiner responds to a number of distinguishing arguments presented regarding Claim 1 in the prior Amendment mailed April 17, 2003.

Applicants maintain that the remarks given in the prior Amendment distinguish the claims from the applied art. Applicants hereby incorporate all of those distinguishing remarks in this response, but for the convenience of the Examiner, Applicants will

not repeat them here in detail. Instead, the focus will be placed on the most important and evident shortcomings given in the final Office Action and, in particular, the Examiner's Response to Arguments given in paragraph 6 of the Office Action.

Regarding Claim 1, in paragraph 3 of the final Office Action, the Examiner maintains that "during a pointing task the Perseus system uses, receives or access[es] object description information or Object representation (OR) of the person and the item being pointed to". (Office Action, p. 3, lines 3-5) Similarly, paragraph 6 of the final Office Action states "during a pointing task the Perseus system uses, receives or access[es] object description information or Object representation (OR) of the person and the item being pointed to". (Office Action, p. 6, lines 2-4)

Although the Office Action sweepingly states that the Perseus system "receives" (as well as "uses" or "accesses") OR during a pointing task, as described in 3.7.1 of Kahn, pointing is the only external input once the pointing task is called. There is no showing by the Examiner that during the identification process the Perseus system receives additional external information "substantially simultaneously" with the sensing of a triggering event, as recited in Claim 1. Any processing that precedes or follows the pointing gesture of the Perseus system is not "receiving" additional information that "characterizes" at least one machine sensible feature of a target that occurs "substantially

simultaneously" with the step of "sensing a triggering event generated by a human operator", as recited in Claim 1.

To further clarify the distinction with Claim 1 in this regard, Claim 1 has been amended above to clarify that the method comprises "receiving additional external information that characterizes at least one machine-sensible feature of a target".

In addition, the Office Action fails to demonstrate that Kahn, in the identification context of "locating and displaying an image of a target", does so by "aiming a camera in response to said sensing and said receiving step", as recited in Claim 1. Fig. 1 of Kahn does not show this aspect of Claim 1. (Although the Office Action also cites Sections 3.6 and 3.7 of Kahn for showing analogous recitations in Claims 13 and 14, there is no description of aiming a camera in those sections of Kahn.)

Accordingly, for at least the above noted reasons, independent Claim 1 as amended is not anticipated by Kahn. Independent Claim 12 has been amended in like manner above and independent Claims 13 and 14 already include analogous distinguishing recitation, and may thus be distinguished from Kahn for analogous reasons. (Although Claims 13 and 14 do not use the "substantially simultaneously" language, the recitation "inputting further information" about "said target" relates the further information temporally to the input regarding a position of a target.) Reconsideration and allowance of independent Claims 1 and 12-14 is thus respectfully

requested.

As noted above, dependent Claims 2, 4, 6, 7 and 15 were rejected as anticipated by Kahn, and dependent Claims 8-11 were rejected as obvious over Kahn in combination with Billinghamst. Without conceding the patentability per se of dependent Claims 2, 4, 6-11 and 15, it is submitted that they are likewise allowable at least by virtue of their dependencies on their respective independent claim.

In addition, focusing briefly and in particular on the rejection of dependent Claim 4, paragraph 3 of the Office Action (at p. 4) points to Section 3.6 of Kahn for purportedly teaching the Claim 4 recitation of the receiving step "receiving speech from said human operator". The receiving step of Claim 4, of course, refers to receipt of the "additional external information" recited in the method of locating and displaying an image of a target in Claim 1. Although Section 3.6 of Kahn refers to first receiving a "command" such as "This is Bill's Pepsi can" from a higher level system and then receiving a pointing gesture, the command is used in instantiating a specialized OR in the LTVM, not in an identification process. Thus, for at least these additional reasons, dependent Claim 4 is distinguishable from Kahn.

Also, focusing briefly and in particular on the rejection of dependent Claim 6, the Office Action points to Sections 3.6-3.7.1 of Kahn to broadly assert that "Kahn also teach[es] that in

addition to sensing a gesture indicating a direction, he also suggest[s] the use of speech in collaboration with gesture in assisting locating a target". (Office Action, page 4) However, as noted, Section 3.6 of Kahn refers to using commands in instantiating a specialized OR in the LTVM, not an identification process, while Section 3.7.1 of Kahn teaches that pointing is the only external input received during the identification process.

Sections 3.7 and 3.7.1 of Kahn indicate that the visual routines of the identification process of Section 3.7.1 may be called by being passed parameters from a higher level natural language system. However, it is clear that such parameters are determined and sent before the identification process begins and are used by the visual routine only after a subsequent pointing is detected. Thus, Sections 3.7 and 3.7.1 fail to show additional external information being received "substantially simultaneously" with the sensing of a triggering event, as recited in dependent Claim 6 via Claim 1.

In addition, however they originate, the pre-determined parameters of Kahn are "symbols referencing a person OR and list of items that may be pointed to". (Kahn, Section 3.7.1, lines 3-4; also, Section 3.7, second paragraph) In effect, the parameters used to call the identification process act as a filter that pre-determines what objects may be detected when the identification process is subsequently initiated by pointing. Thus, the

parameters are not receipt of "additional external information" during target locating that "characterizes at least one machine-sensible feature of a target", as recited in dependent Claim 6 via Claim 1.

Moreover, the Office Action fails to address the "machine sensor" aspect of Claim 6. Thus, for at least these additional reasons, Claim 6 is distinguished from Kahn.

Finally, the above distinctions highlight important distinctions between Kahn and the invention as recited. Creation and instantiation of an object representation is required before the Perseus system is able to identify an object via the gesture<sup>1</sup>, and the parameters of Kahn are based upon the prior instantiation of an object. The actual identification process itself, as described in Section 3.7.1 of Kahn, only uses the pointing gesture as input during identification. Identification based solely on pointing will fail if the information in the gesture is insufficient to clearly define a target, if the region pointed to is cluttered with objects, etc. In addition, proper identification

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<sup>1</sup> Section 3.3 of Kahn begins by clearly stating "[t]he pointing task requires representations for various objects like the person and the item being pointed to". Section 3.3.1 of Kahn begins by stating "[e]ach OR in the Perseus system must be instantiated before it can be used". Although the last paragraph of paragraph 6 of the Office Action maintains that registration of an object is not required prior to identification, the sentence quoted in the Office Action from the Introduction section of Kahn ("[h]igher level information allows Perseus to select the best visual operators for interpreting the scene in a given situation") is

will fail in Kahn if the subsequent pointing is toward an object that was not previously instantiated, or is not one of the parameters determined before the identification process begins (i.e., is not included in the "list of items that may be pointed to").

By contrast, Claim 1 provides for identification without necessarily including a previous instantiation of objects as is needed in Kahn, or pre-selection of parameters. Claim 1 also provides more reliability and flexibility in the identification process by receiving additional external information along with the sensing of a gesture indicating a direction of the target. In this regard, Claim 1 recites receiving "additional external information" that "characterizes at least one machine-sensible feature of a target" and which is received "substantially simultaneously" with the sensing of a triggering event. Claim 1 further recites "aiming a camera in response to said sensing and said receiving step".

Thus, in view of the above remarks, it is submitted that all of the pending claims in the Application, namely Claims 1, 2, 4 and 6-15, are in shape for allowance. Accordingly, allowance is respectfully requested. Should the Examiner believe that a telephone conference or personal interview would facilitate resolution of any remaining matters, the Examiner may contact Applicant's attorney at the number given below.

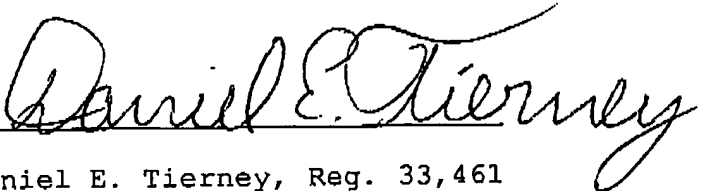
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completely in keeping with prior instantiation of the ORs.

Please charge any fee deficiencies and credit any overpayments  
to Deposit Account No. 14-1270.

Respectfully submitted,

By



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July 28, 2003

CERTIFICATE OF TRANSMISSION

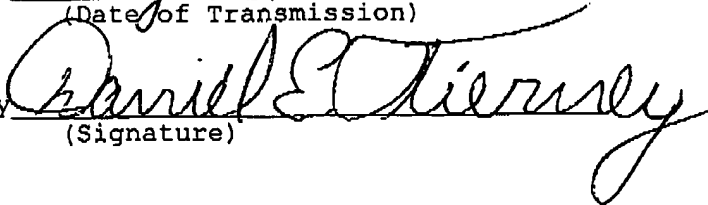
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